

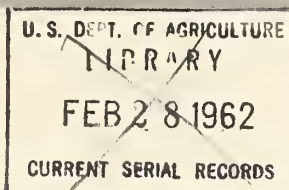
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SUGAR
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YIELDS OF SUGARCANE, BEETS AND CENTRIFUGAL

SUGAR IN SELECTED COUNTRIES

The current world surplus and depressed prices of sugar, and the reshuffling of trade patterns brought about by the Cuban Castro Government's alliance with the Communist bloc have focussed more than usual interest on questions of relative efficiency of sugar production in various countries.

A basic, but by no means the only point of comparison between countries in this respect is yield. Yields can be expressed in terms of tons of sugarcane or sugar beets per acre harvested, production of sugar per ton of beets or cane, and production of sugar per acre.

This Circular is designed to provide such data for all countries for which reliable data are available. Annual extension and revision are tentatively planned.

Crop Yield Per Acre: One of the most striking facts shown by a study of sugar yields around the world is the tremendous variation from country to country. There is far more variation in this respect than there is from year to year in any one country.

If all beet sugar countries included in these tables are ranked in order of indicated 1961 beet yield per acre harvested, the yield for those nearest the center would be between 12 and 13 tons per acre. There are 7 countries with yields of less than 11 tons per acre, 11 countries with 11 through 15 tons per acre, and 7 countries with yields of 16 or more tons per acre. (See Table 1.)

Beet yields per acre are generally lower in Eastern than in Western Europe. Indicated yields are below 9 tons per acre in Rumania and in the U.S.S.R., and probably are below 7 tons per acre in Mainland China, not yet estimated for 1961. At the opposite extreme, yields in the Netherlands are expected to be more than 21 tons per acre.

In a similar ranking, yields in cane sugar countries are centered around a figure of 28 tons of cane per acre harvested, but with a very wide divergence on both sides of the center. There are 5 countries in which the sugarcane yield per acre harvested for sugar in 1961 is indicated to be less than 16 tons per acre. These are Burma, Pakistan, Paraguay, Thailand, and Uruguay. At the other end of the scale, there are 5 countries or states with yields of more than 40 tons per acre. These are British Guiana, Egypt, the State of Hawaii, Peru, and Surinam. The extremes are Burma, with an indicated yield of about 13 tons per acre, and Hawaii with nearly 88 tons. (See Table 2.)

In most areas of the world, there has been an upward trend in yield of sugar-producing crops per acre since the early 1950's. Increases in yields per acre generally have been greater with sugar beets than with sugarcane. However, with so much of the world's sugar beets being grown in Europe and the U.S.S.R. the effect of weather can be seen there as a result of the drought in 1959, the bumper crop year in 1950 and the less favorable year in 1951. Yet the wide differences which remain between countries in similar geographical areas imply that even greater yields can readily be obtained in many countries, given adequate economic incentive.

Sugar Output Per Acre: In terms of sugar manufactured per acre of beets or cane harvested, there is again a wide range between countries and areas. (See Tables 3 and 4.) However, the variation from country to country is much less extreme for sugar beets than for sugarcane. Indicated sugar output in 1961 is less than one ton per acre in only 2 countries (Rumania and the U.S.S.R.), and more than 3 tons per acre in only 2 countries (the Netherlands and Switzerland). For 13 countries, it is expected to be from 1 to 1.9 tons per acre and for 9 countries from 2 to 2.9 tons per acre.

Sugar output per acre of cane harvested in 1961 is expected to be between 2.0 and 3.9 tons for about half of all the cane sugar countries included. However, there are 3 countries, Panama, Paraguay, and Thailand, in which the sugar yield is expected to be below 1 ton per acre. In Peru, the yield is expected to exceed 8 tons per acre, and in the State of Hawaii it will approach 10.5 tons.

Sugar Per Ton of Sugarcane or Beets: The amount of sugar recovered per ton of sugarcane or beets put through the mill is affected by many factors, including the variety of sugar beets or cane grown, the stage of development and maturity at time of harvest, and the efficiency of the mill in recovering the sugar. Among the countries included in the present compilation, there seems to be no clear-cut and general upward trend in quantity of sugar produced per ton of beets or cane processed, except among the countries where this ratio was very low in the early 1950's.

Table 2.--SUGAR CANE: Acreage, yield and production in specified countries, average 1950-51 through 1954-55, annual 1959, 1960 and 1961 - Continued

Continent and country	Acreage harvested			Yield per acre ^{1/}			Production					
	Average	1959	1960	Average	1959	1960	1961 ^{2/}	1959	1960	1961 ^{2/}	1,000	short tons
	1950-51 through 1954-55	1959	1960	1950-51 through 1954-55	1959	1960	1961 ^{2/}	1959	1960	1961 ^{2/}	1,000	short tons
Africa:												
Congo, Republic of the.	4/ 9	13	--	4/ 19.7	20.4	--	--	265	--	--	--	--
Mauritius.....	169	188	194	25.6	27.8	13.6	(27.7)	5,219	2,638	(4,850)	4,850	9,500
Republic of South Africa	223	280	260	26.2	32.6	33.3	(34.0)	9,123	8,650	9,500	8,650	9,500
Rhodesia & Nyasaland,	--	5	8	--	26.6	33.7	(35.0)	127	284	(315)	284	315
Federation of.....	79	90	92	47.1	40.5	42.3	43.7	3,644	3,893	4,067	3,893	4,067
U.A.R., Egypt.....	480	576	554	29.5	31.9	27.9	33.7	18,378	15,465	18,732	15,465	18,732
Total.....												
Asia:												
South and East												
Burma.....	62	88	93	15.4	13.2	13.0	(13.1)	1,146	1,213	(1,258)	1,213	1,258
China, Taiwan.....	203	215	227	28.2	32.4	36.0	(35.1)	6,958	8,180	(7,360)	8,180	7,360
India.....	4,175	5,178	5,734	14.5	16.2	16.6	16.6	84,043	95,250	101,412	95,250	101,412
Indonesia.....	--	242	197	--	36.4	36.4	36.8	8,818	7,165	7,110	7,165	7,110
Japan.....	9	13	16	10.7	23.7	29.3	32.1	308	469	577	469	577
Pakistan ^{3/}	4/ 950	1,261	1,238	4/ 14.1	12.8	13.9	13.8	16,112	17,261	17,360	17,261	17,360
Philippines ^{3/}	555	597	564	19.5	23.0	24.7	(23.6)	13,754	13,941	14,284	13,941	14,284
Thailand ^{3/}	185	332	393	9.4	14.6	15.1	15.2	4,837	5,929	6,063	5,929	6,063
Total.....	6,139	7,926	8,462	15.2	17.2	17.7	17.5	135,976	149,408	155,424	149,408	155,424
Oceania:												
Australia.....	310	314	341	27.1	32.1	30.1	26.2	10,083	10,266	10,052	10,266	10,052
Fiji.....	55	88	--	22.8	31.1	--	(26.0)	2,741	1,308	(1,872)	1,308	1,872
Total.....	365	402	341	26.4	31.9	30.1	26.2	12,824	11,574	11,924	11,574	11,924
Grand Total.....	14,737	18,047	18,802	18.5	20.0	20.0	20.2	360,448	376,767	403,930	376,767	403,930

^{1/} Calculated before rounding of acreage and production.

^{2/} Preliminary.

^{3/} Includes acreage and production for non-centrifugal sugar.

^{4/} Short-time average.

^{5/} Australia only.

Figures in parentheses are tentative office estimates based on sugar production forecasts.

Foreign Agricultural Service. Official estimates of foreign countries, reports of Agricultural Attaches and other U.S. representatives abroad and results of office research and other information.

Table 3.-- SUGAR OUTPUT RATIOS: Tons of centrifugal sugar, raw value, produced per acre harvested and per ton of material processed; selected beet-sugar countries, average 1950-51 through 1954-55, annual 1959, 1960 and 1961

(Data in short tons, raw value)

Continent and Country	Tons of sugar produced							
	Per acre of sugar beets harvested				Per ton of sugar beets processed			
	Average				Average			
	1950-51 through 1954-55	1959	1960	1961	1950-51 through 1954-55	1959	1960	1961
North America:								
Canada.....	1.54	1.68	1.88	1.77	0.141	0.122	0.148	0.139
United States.....	2.29	2.61	2.55	2.38	0.148	0.141	0.147	0.142
South America:								
Uruguay.....	1.21	0.89	1.23	1.13	0.124	0.119	0.135	0.126
Asia:								
China, Mainland.....	0.91	1.07	0.86	-	0.143	0.167	0.149	-
Japan.....	1.12	1.72	1.49	1.58	0.144	0.143	0.146	0.140
Turkey (Europe and Asia)....	1.52	1.48	1.58	1.49	0.165	0.157	0.160	0.162
Europe:								
West -								
Austria.....	1.90	2.43	3.18	2.78	0.153	0.153	0.167	0.171
Belgium.....	2.60	1.52	3.58	2.67	0.159	0.148	0.164	0.160
Denmark.....	2.14	1.98	2.70	2.81	0.141	0.154	0.148	0.167
Finland.....	1.07	1.42	1.79	1.56	0.106	0.170	0.143	0.140
France.....	1.55	1.18	2.75	1.98	0.118	0.135	0.156	0.128
Germany, West.....	2.27	2.10	2.92	2.32	0.143	0.162	0.152	0.148
Ireland.....	1.79	2.28	2.16	2.00	0.156	0.153	0.140	0.152
Italy.....	1.63	2.19	1.78	1.86	0.129	0.123	0.125	0.131
Netherlands.....	2.69	2.39	3.41	3.10	0.146	0.161	0.142	0.144
Spain.....	1.24	1.61	1.58	1.53	0.134	0.132	0.130	0.127
Sweden.....	2.47	2.48	3.16	2.66	0.165	0.164	0.148	0.155
Switzerland.....	2.27	3.46	3.08	3.08	0.143	0.157	0.148	0.157
United Kingdom.....	1.82	2.29	2.62	2.28	0.146	0.153	0.134	0.150
East -								
Bulgaria.....	0.75	1.05	1.22	1.05	0.126	0.162	0.115	0.111
Czechoslovakia.....	1.38	1.32	1.89	1.74	0.133	0.140	0.123	0.134
Germany, East.....	1.62	1.51	1.65	1.21	0.138	0.170	0.138	0.130
Hungary.....	1.01	1.40	1.60	1.28	0.127	0.143	0.141	0.132
Poland.....	1.36	1.15	1.67	1.64	0.163	0.163	0.146	0.147
Rumania.....	0.58	0.77	0.81	0.88	0.111	0.101	0.106	0.124
Yugoslavia.....	0.73	1.48	1.64	1.45	0.102	0.110	0.126	0.125
U.S.S.R. (Europe and Asia)....	0.84	0.92	0.88	0.90	0.130	0.140	0.114	0.125

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Growth Through Agricultural Progress

Table 4.--SUGAR OUTPUT RATIOS: Tons of centrifugal sugar, raw value, produced per acre harvested and per ton of material processed; selected sugarcane countries, average 1950-51 through 1954-55, annual 1959, 1960 and 1961

(Data in short tons, raw value)

Continent and Country	Tons of sugar produced							
	Per acre of sugarcane harvested				Per ton of sugarcane processed			
	Average 1950-51 through 1954-55	1959	1960	1961	Average 1950-51 through 1954-55	1959	1960	1961
North America:								
North -								
United States.....	1.84	2.08	2.05	2.36	0.085	0.090	0.092	0.089
Hawaii.....	9.87	8.51	10.48	10.45	0.122	0.099	0.127	0.119
Puerto Rico.....	3.27	3.04	3.38	3.53	0.112	0.100	0.111	0.112
Virgin Islands of the U.S.....	--	2.97	1.56	3.68	--	0.107	0.097	0.102
Central:								
Costa Rica.....	0.67	0.85	0.97	1.03	0.043	0.050	0.054	0.059
El Salvador.....	2.19	3.11	3.05	2.70	0.083	0.088	0.096	0.093
Guatemala.....	--	3.67	3.76	4.19	--	0.107	0.107	0.121
Mexico.....	1.71	2.87	2.23	2.58	0.075	0.109	0.087	0.109
Nicaragua.....	0.88	1.43	1.40	1.79	0.047	0.067	0.065	0.084
Panama.....	--	0.76	0.83	0.92	--	0.030	0.034	0.034
Caribbean:								
Cuba.....	2.12	2.10	2.40	1.77	0.121	0.122	0.143	0.099
Guadeloupe.....	2.23	2.75	2.85	2.97	0.084	0.099	0.100	0.092
Martinique.....	2.17	2.87	3.19	2.76	0.078	0.089	0.101	0.088
West Indies Federation								
Barbados.....	4.00	3.34	3.47	3.62	0.106	0.087	0.106	0.110
Jamaica.....	2.89	2.67	2.63	2.50	0.116	0.109	0.101	0.100
St. Kitts.....	3.67	4.00	3.71	4.00	0.120	0.120	0.106	0.118
Trinidad and Tobago.....	2.49	2.90	3.16	2.65	0.109	0.117	0.111	0.094
South America:								
Argentina.....	1.22	1.57	1.55	1.29	0.080	0.094	0.088	0.073
Brazil.....	0.92	1.11	1.13	1.12	0.055	0.060	0.060	0.060
British Guiana.....	3.91	3.82	3.69	3.68	0.102	0.094	0.087	0.090
Paraguay.....	0.73	0.74	0.62	0.67	0.064	0.059	0.077	0.052
Peru.....	7.75	8.86	8.05	8.11	0.124	0.125	0.116	0.114
Surinam.....	--	4.00	3.00	3.00	--	0.085	0.069	0.069
Uruguay.....	1.00	1.60	1.20	1.40	0.118	0.110	0.061	0.089
Africa:								
Congo, Republic of the.....	2.00	3.00	--	--	0.102	0.147	--	--
Mauritius.....	3.16	3.40	1.34	3.40	0.124	0.123	0.098	0.123
Rhodesia & Nyasaland, Federation of.....	--	2.40	3.88	3.89	--	0.094	0.109	0.111
South Africa, Republic of...	3.09	3.79	4.05	4.04	0.116	0.116	0.122	0.119
U.A.R., Egypt.....	3.34	4.43	4.23	4.62	0.071	0.109	0.100	0.106
Asia:								
Burma.....	1.81	2.31	2.20	2.16	0.118	0.177	0.169	0.165
China, Taiwan.....	3.58	4.10	4.60	4.48	0.127	0.127	0.128	0.128
India.....	1.19	1.52	1.41	1.34	0.082	0.093	0.085	0.081
Indonesia.....	--	3.89	3.77	3.71	--	0.107	0.104	0.101
Japan.....	--	0.38	0.69	1.50	--	0.016	0.023	0.047
Pakistan.....	1.09	0.96	1.04	1.05	0.078	0.075	0.075	0.076
Philippines.....	2.26	2.67	2.70	2.76	0.116	0.116	0.109	0.117
Thailand.....	0.59	0.80	0.70	0.77	0.063	0.055	0.047	0.051
Oceania:								
Australia.....	3.63	4.46	4.41	3.89	0.134	0.139	0.146	0.148
Fiji Islands.....	2.60	3.46	--	3.06	0.114	0.111	0.126	0.118

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